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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,602	12/21/2001	Abbas Rashid	NEXSI-01222US0	6086
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SHUMAKER & SIEFFERT, P. A. 8425 SEASONS PARKWAY SUITE 105 ST. PAUL, MN 55125			BHANDARI, PUNEET	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,602

Applicant(s)

RASHID ET AL.

Examiner

Puneet Bhandari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/21/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-77 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 77 is/are allowed.
- 6) ☐ Claim(s) 39-72 and 76 is/are rejected.
- 7) ☒ Claim(s) 73-75 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/11/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **39-72** and **76** are rejected under 35 U.S.C. 102(e) as being anticipated by Dai et al.(US 6658016).

Regarding claim **39**, *Fig 3a* anticipates “*an apparatus*” comprising:

A set of input ports to receive data packets is anticipated by “*input-ports 88*” disclosed in Fig 3A or column 8, lines 5-8

A set of sink ports coupled to the set of input ports to receive and forward said data packets is anticipated by “*output-ports 84*” disclosed in Fig 3A or column 8, lines 5-8;

A set of data rings coupling said set of input ports and said set of sink ports is anticipated by “*ring segments 18 and 24 coupling input-ports 88 and output-ports 84*” disclosed in Fig 3A; and

A multi-sink port coupled to a data ring in said set of data rings is anticipated by “*data distribution control unit (240) coupled to the ring segment 18*” disclosed in Fig 3A or column 12, lines 63-67 and a sink port in said set of sink ports is anticipated by

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"within data distribution control unit (240) multicast queue 242 coupled to output-ports 84" disclosed in Fig 3A or column 12, lines 63-67.

Regarding claim **40**, wherein said multi-sink port is coupled to each data ring in said set of data rings is anticipated by *"data distribution control 240 unit"* disclosed in Fig 3A or column 12, lines 63-67 and each sink port in said set of sink ports is anticipated by *"within data distribution control unit (240) multicast queue 242 coupled to output-ports 84"* disclosed in Fig 3A or column 12, lines 63-67

Regarding claim **41**, wherein said multi-sink port snoops data packets on said data ring to determine whether to accept said data packets based on a first criteria is anticipated by *"multicast queue accept the data packet if destination address of the data packet includes more than one network ports"* disclosed in column 14, lines 43-46.

Regarding claim **42**, wherein first set of criteria includes said data packets containing the destination addresses supported by the said sink port is anticipated by *"The multicast queue is operative to distribute multiple data burst, having header of the packet specifying destination addresses supported"* disclosed in column 15, lines 35-44.

Regarding claim **43**, wherein said first set of criteria further includes:

Said multi-sink port being enabled to receive data packets is anticipated by *"providing bursts of packet data received via data ring to the destination managing unit 74"* disclosed in column 12, lines 45-40 or in Fig 3A; and

Said multi-sink port having sufficient resources to store said data packet is anticipated by *"data distribution control 240 unit has eight transmit buffer queues"* disclosed in column 12, lines 63-67.

Regarding claim **44**, wherein said multi-sink port forwards a data packet from said data ring to said sink port is anticipated by *"from the multicast queue 242 in data distribution control 240 unit the data is distributed to the selected transmit buffer queue"* disclosed in column 14, lines 43-50.

Regarding claim **45**, wherein said multi-sink port forwards said data packet to said sink port if said data packet has a destination address corresponding to said sink port is anticipated by *"data distribution control 240 unit reads the header information (destination address) and forwards the data packets to the appropriate one of network output ports 84"* disclosed in column 15, lines 35-44.

Regarding claim **46**, wherein said multi-sink port includes a table co-relating destination addresses to sink ports in said set of sink ports is anticipated by *"packet routing table 304"* disclosed in column 14, lines 12-35.

Regarding claim **47**, wherein said sink port determines whether to accept said data packet based on a second set of criteria is anticipated by *"monitoring the availability of buffer space in corresponding one of the transmit buffer queues"* disclosed in column 15, lines 44-47.

Regarding claim **48**, wherein said second criteria includes

Said sink ports having sufficient storage resources for storing said data packet is anticipated by *"monitoring the availability of buffer space in corresponding one of the transmit buffer queues"* disclosed in column 15, lines 44-47; and

A total number of packets being received by said sink port not exceeding a predetermined number of packets is anticipated by *"credit value indicative of a number of available blocks at the transmit buffer queue"* disclosed in column 15, lines 47-56.

Regarding claim 49, wherein said multi-sink port (*data distribution control 240*) includes:

A ring interface coupled to said set of data rings to receive data is anticipated by *"data distribution control 240 unit coupled to the ring segment 18 by ring interface 248"* disclosed in Fig 3A;

A storage buffer coupled to said ring interface to receive and store data is anticipated by *"transmit buffer queues 80"* disclosed in Fig 3A or column 12, lines 63-67; and

A sink request port coupled to said storage buffer to receive data from said storage buffer and transmit said data is anticipated by *"interaction between output ports 84 designated as A'_0, A'_1, \dots, A'_7 and transmit buffer 80"* disclosed in Fig. 3A.

Regarding claim 50, wherein said multi-sink port further includes a lookup table coupled to said sink request port containing entries that correlate destination addresses to sink ports in said set of sink ports is anticipated by *"packet routing table 304"* disclosed in column 13, lines 21-36.

Regarding claim 51, wherein sink port in said set of sink ports includes:

A sink port ring interface coupled to said set of data rings to receive data is anticipated by *"output ports 84 designated as A'_0, A'_1, \dots, A'_7 coupled to the data ring and the control ring through interface 248 and 250 respectively"* disclosed in Fig 3A;

A sink port storage buffer coupled to said sink port ring interface and said sink request port to receive and store data is anticipated by “*transmit buffer queues 80*” disclosed in Fig 3A or column 12, lines 63-67; and

An output port coupled to said storage buffer to receive data from said sink port storage buffer and transmit said data on a communication link is anticipated by “*transmit buffer queues are connected to 10 Mbps or 100 Mbps data communication links*” disclosed in column 8, lines 52-55.

Regarding claim 52, wherein a first data bus couples said sink request port to said sink storage buffer is anticipated by “*input port 248 for receiving burst of data from data ring and forwarding then to transmit buffer queue*” disclosed in column 12 lines 63-67 and column 13, lines 1-5 and a second bus couples said sink request to said sink storage buffer is anticipated by “*input port 250 for receiving data from control ring and forwarding then to transmit buffer queue*” disclosed in column 12 lines 63-67 and column 13, lines 1-5.

Regarding claim 53, wherein sink port in said set of sink ports includes:

A sink port ring interface coupled to said set of data rings to receive data is anticipated by “*output ports 84 designated as A'_0, A'_1, \dots, A'_7 coupled to the data ring and the control ring through interface 248 and 250 respectively*” disclosed in Fig 3A;

A sink port storage buffer coupled to said sink port ring interface and said multi-sink port to receive and store data is anticipated by “*transmit buffer queues 80*” disclosed in Fig 3A or column 12, lines 63-67

An output port coupled to said sink port storage buffer to receive data from said sink port storage buffer and transmit said data on a communication link is anticipated by “*transmit buffer queues are connected to 10 Mbps or 100 Mbps data communication links*” disclosed in column 8, lines 52-55.

Regarding claim 54, wherein an input port in said set of input ports includes:

A communication interface to receive data packets from a communication link is anticipated by “*input ports 88 designated as A”₀, A”₁,..... A”₇ coupled to the communication link*” disclosed in Fig 3A or column 8, lines 5-10; and

An input storage buffer coupled to said communication interface to store data from said data packets is anticipated by “*packet buffer queue 86*” disclosed in column 8, lines 8-16, said input port storage buffer coupled to at least one data ring in said set of data rings is anticipated by “*packet buffer queue 86 is coupled to the data ring segment 70 through the source managing unit 90*” disclosed in Fig 2A or column 8, lines 8-16

Regarding claim 55, A cross-bar switch is anticipated by “*packet switching fabric*” disclosed in column 6, lines 27; comprising

A set of input ports to receive data packets is anticipated by “*input-ports 88*” disclosed in Fig 3A or column 8, lines 5-8

A set of sink ports coupled to the set of input ports to receive and forward said data packets is anticipated by “*output-ports 84*” disclosed in Fig 3A or column 8, lines 5-8;

A set of data rings coupling said set of input ports and said set of sink ports is anticipated by *“ring segments 18 and 24 coupling input-ports 88 and output-ports 84”* disclosed in Fig 3A; and

A multi-sink port coupled to a data ring in said set of data rings is anticipated by *“data distribution control 240 unit coupled to the ring segment 18”* disclosed in Fig 3A or column 12, lines 63-67 and a sink port in said set of sink ports is anticipated by *“within data distribution control unit (240) multicast queue 242 coupled to output-ports 84”* disclosed in Fig 3A or column 12, lines 63-67.

Regarding claim 56, wherein each sink port in said set of sink ports snoops data packets on each said data ring in said set of data rings is anticipated by *“data distribution unit is operative to read header information for each packet which is coupled to the output port as well as data and control rings”* disclosed in column 15, lines 35-40 and said multi-sink port snoops data packets on each data ring in said set of data rings is anticipated by *“multicast queue is operative to distribute multicast data”* disclosed in column 15, lines 40-44.

Regarding claim 57, wherein said multi-sink port snoops data packets on each data ring in said set of data rings to determine whether said data packets are destined for at least one sink port in said set of sink ports is anticipated by *“The multicast queue is operative to distribute multiple data burst, having header information specifying multicast addresses, to transmit queue buffers for transmission to multiple destination nodes”* disclosed in column 14, lines 37-50 or column 15, lines 35-44.

Regarding claim **58**, wherein said multi-sink port snoops each of the said data packets to determine whether said each of said data packets contains a destination address supported by at least one sink port in said set of sink port is anticipated by *"The multicast queue is operative to distribute multiple data burst, having header of the packet specifying destination addresses supported"* disclosed in column 15, lines 35-44.

Regarding claim **59**, wherein said multi-sink port includes a table co-relating destination addresses to sink ports in said set of sink ports is anticipated by *"packet routing table 304"* disclosed in column 14, lines 12-35.

Regarding claim **60**, wherein said multi-sink port (*data distribution control 240*) includes:

A multi-sink port ring interface coupled to said set of data rings to receive data is anticipated by *"data distribution control 240 unit coupled to the ring segment 18 by ring interface 248"* disclosed in Fig 3A;

A multi-sink port storage buffer coupled to said ring interface to receive and store data is anticipated by *"transmit buffer queues 80"* disclosed in Fig 3A or column 12, lines 63-67; and

A sink request port coupled to said multi-sink port storage buffer to receive data from said multi-sink storage buffer and transmit said data is anticipated by *"from the multicast queue 242, the data packet is distributed to selected transmit buffer queue connected to the corresponding destination network ports for transmission"* disclosed in column 14, lines 43-50.

Regarding claim **61**, wherein said multi-sink port further includes a look-up table coupled to said sink request port containing entries that correlate destination addresses to sink ports in said set of sink ports is anticipated by *"packet routing table 304"* disclosed in column 13, lines 21-36.

Regarding claim **62**, wherein sink port in said set of sink ports includes:

A sink port ring interface coupled to said set of data rings to receive data is anticipated by *"output ports 84 designated as A'_0, A'_1, \dots, A'_7 coupled to the data ring and the control ring through interface 248 and 250 respectively"* disclosed in Fig 3A;

A sink port storage buffer coupled to said sink port ring interface and said multi-sink port to receive and store data is anticipated by *"transmit buffer queues 80"* disclosed in Fig 3A or column 12, lines 63-67

An output port coupled to said sink port storage buffer to receive data from said sink port storage buffer and transmit said data on a communication link is anticipated by *"transmit buffer queues are connected to 10 Mbps or 100 Mbps data communication links"* disclosed in column 8, lines 52-55.

Regarding claim **63**, wherein a first data bus couples said sink request port to said sink storage buffer is anticipated by *"input port 248 for receiving burst of data from data ring and forwarding then to transmit buffer queue"* disclosed in column 12 lines 63-67-column 13, lines 1-5 and a second bus couples said sink request to said sink storage buffer is anticipated by *"input port 250 for receiving data from control ring and forwarding then to transmit buffer queue"* disclosed in column 12 lines 63-67-column 13, lines 1-5.

Regarding claim **64**, wherein an input port in said set of input ports includes:

A communication interface to receive data packets from a communication link is anticipated by *"input ports 88 designated as $A''_0, A''_1, \dots, A''_7$ coupled to the communication link"* disclosed in Fig 3A or column 8, lines 5-10; and

An input storage buffer coupled to said communication interface to store data from said data packets is anticipated by *"packet buffer queue 86"* disclosed in column 8, lines 8-16,

Said input port storage buffer coupled to at least one data ring in said set of data rings is anticipated by *"packet buffer queue 86 is coupled to the data ring segment 70 through the source managing unit 90"* disclosed in Fig 2A or column 8, lines 8-16

Regarding claim **65**, a method for transferring data packets to target destinations, said method comprising the steps of:

(a) receiving a set of data packets is anticipated by *"Data Distribution Control Unit receives data from the data ring at input port 248"* as disclosed in Fig 3A or column 12 lines 63-67-column 13 lines 1-5;

(b) transferring said set of data packets to a set of data rings is anticipated by *"transferring bursts of data packet to data ring port 224"* disclosed in column 13, lines 47-51, wherein a set of sink ports is coupled to said set of data rings is anticipated by *"output ports 84 designated as A'_0, A'_1, \dots, A'_7 coupled to the data ring and the control ring through interface 248 and 250 of data distribution control unit 240 respectively"* disclosed in Fig 3A;

Multi-sink port is coupled to said set of data rings is anticipated by *"data distribution control 240 unit coupled to the ring segment 18 and 22 control interface 248 and 250 respectively"* disclosed in Fig 3A;

(c) determining whether said multi-sink port is to accept data packets, based on a first set of criteria is anticipated by *"if destination address of the data packet includes more than one network ports the packet is accepted by multicast queue"* disclosed in column 14, lines 43-46 ; and

(d) forwarding a data packet accepted by said multi-sink port to a recipient set of sink ports in said set of sink ports is anticipated by *"data packet is distributed to selected ones of the transmit buffer queues"* disclosed in column 14, lines 46-50.

Regarding claim 66, including the steps of

(e) said sink ports, collecting data from a data ring in said set of data rings wherein said data from said data ring has not been forwarded to said sink port by said multi-sink port is anticipated by *"only if destination address includes more than one port the packet is forwarded to multicast queue otherwise packet may be broadcasted or routed to the given destination address"* as disclosed in column 14, lines 46-63.

Regarding claim 67, wherein step (e) includes the step of:

(1) a first sink port in said set of sink ports, determining whether a first data packet includes a destination address in a predetermined destination addresses is anticipated by *"data distribution unit is operative to read the header information of the packet burst and distribute them to appropriate ports"* disclosed in column 15, lines 35-40.

Regarding claim **68**, where in said step (e) includes the step of:

(2) said first sink port determining whether to accept said first data packet based on a set criteria is anticipated by: *"distributing the data burst to appropriate output ports"* disclosed in column 15, lines 35-40.

Regarding claim **69**, wherein step (e)(2) includes the steps of:

(i) Determining whether said first sink port is enabled to receive data packets is anticipated by "distributing the data packet to appropriate output ports specified in header information of the packet" disclosed in column 15, lines 35-40;

(ii) Determining whether said first sink port has sufficient resources to store said first data packet is anticipated by *"monitoring the availability of the buffer space corresponding to buffer queues 80"* disclosed in column 15, lines 45-48;

(iii) determining whether said first sink port is currently receiving a maximum allowable number of data packets is anticipated by "credit value indicative of number of available blocks at the transmit buffer queue" disclosed in column 15, lines 50-55; and

(iv) determining whether said first data packet has a number of bytes within predetermined range is anticipated by *"corresponding initial credit value which is indicative of corresponding initial number of authorized burst of selected data packet transmitted to the corresponding destination device"* disclosed in column 16, lines 25-30.

Regarding claim **70**, the method of claim 65, further including the step of:

(f) said sink ports in said recipient set of sink ports transmitting the said data packet collected in said step (e) is anticipated by “*transmit buffer queues are connected to 10 Mbps or 100 Mbps data communication links*” disclosed in column 8, lines 52-55.

Regarding claim **71**, wherein said step (c) includes the step of:

(1) determining whether said data packet contains a destination address corresponding to a sink port in said set of sink port “*data distribution control 240 unit reads the header information (destination address) and forwards the data packets to the appropriate one of network output ports 84*” disclosed in column 15, lines 35-44.

Regarding claim **72**, wherein said step (c) further includes the steps of

(2) determining whether said multi-sink port is enabled to receive data packet is anticipated by “*input port 248 for receiving burst of data from data ring*” disclosed in column 12 lines 63-67 and column 13, lines 1-5 ; and

(3) determining whether said multi-sink port has sufficient resources to store data is anticipated by “*monitoring the availability of the buffer space corresponding to buffer queues 80 by output buffer manager*” disclosed in column 15, lines 45-48.

Regarding claim **76**, a cross-bar switch is anticipated by “*packet switching fabric*” disclosed in column 6, lines 27; comprising

A set of input ports to receive data packets is anticipated by “*input-ports 88*” disclosed in Fig 3A or column 8, lines 5-8

A set of sink ports coupled to the set of input ports to receive and forward said data packets is anticipated by “*output-ports 84*” disclosed in Fig 3A or column 8, lines 5-8;

A set of data rings coupling said set of input ports and said set of sink ports is anticipated by *“ring segments 18 and 24 coupling input-ports 88 and output-ports 84”* disclosed in Fig 3A; and

A multi-sink port coupled to a data ring in said set of data rings is anticipated by *“data distribution control 240 unit coupled to the ring segment 18”* disclosed in Fig 3A or column 12, lines 63-67 and a sink port in said set of sink ports is anticipated by *“within data distribution control unit (240) multicast queue 242 coupled to output-ports 84”* disclosed in Fig 3A or column 12, lines 63-67.

wherein said multi-sink port (*data distribution control 240*) includes:

A multi-sink port ring interface coupled to said set of data rings to receive data is anticipated by *“data distribution control 240 unit coupled to the ring segment 18 by ring interface 248”* disclosed in Fig 3A;

A multi-sink port storage buffer coupled to said ring interface to receive and store data is anticipated by *“transmit buffer queues 80”* disclosed in Fig 3A or column 12, lines 63-67; and

A sink request port coupled to said multi-sink port storage buffer to receive data from said multi-sink storage buffer and transmit said data is anticipated by *“from the multicast queue 242, the data packet is distributed to selected transmit buffer queue connected to the corresponding destination network ports for transmission”* disclosed in column 14, lines 43-50.

Fig 3A anticipates “A set of sink ports coupled to said data ring and said multi-sink port to receive data packets”, wherein sink port in said set of sink ports includes:

A sink port ring interface coupled to said set of data rings to receive data is anticipated by *"output ports 84 designated as A'_0, A'_1, \dots, A'_7 coupled to the data ring and the control ring through interface 248 and 250 respectively" disclosed in Fig 3A;*

A sink port storage buffer coupled to said sink port ring interface and said sink request port to receive and store data is anticipated by *"transmit buffer queues 80"* disclosed in Fig 3A or column 12, lines 63-67; and

An output port coupled to said storage buffer to receive data from said sink port storage buffer and transmit said data on a communication link is anticipated by *"transmit buffer queues are connected to 10 Mbps or 100 Mbps data communication links"* disclosed in column 8, lines 52-55.

Allowable Subject Matter

3. Claim **77** is allowed.
4. Claims **73-75** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Puneet Bhandari whose telephone number is 571-272-2057. The examiner can normally be reached on 9.00 AM To 5.30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Puneet Bhandari
Examiner
Art Unit 2666




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